Multithreading for Dynamic Irregular Applications

The success of parallel computing in solving large-scale practical problems relies on their efficient mapping and execution on available multiprocessor architectures. Many important applications are both unstructured and dynamic in nature, making their efficient parallel implementation a daunting task. Multithreading is especially well-suited for this class of problems. In this talk, we will compare and contrast different parallel versions of a couple of irregular applications. Overall results demonstrate that multithreaded systems offer tremendous potential for quickly and efficiently solving some of the most challenging real-life problems on parallel computers.

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